

Chareonrat Chareonkit 2012: Effect of Blanching and Synthetic Resin on Bitter Compounds and Quality of Lime Juice. Master of Science (Food Science), Major Field: Food Science, Department of Food Science and Technology. Thesis Advisor: Assistant Professor Wannee Jirapakkul, Ph.D. 116 pages.

Lime is one of the major citrus fruits. They have been used for enhancing the taste of foods and preparation of many drinks. The problem of lime juice is bitterness due to the presence of limonoid compounds, especially limonin. Limonin is the major bitter component in most citrus juices. The objectives of this research were to study the effect of blanching and using of synthetic resin for bitterness reduction of lime juice. The effect of pasteurization of reduced bitterness lime juice on bitterness compound, physical and chemical quality of lime juice was also studied. The contents of bitter compounds, flavonoid compounds and vitamin C were examined using High Performance Liquid Chromatography (HPLC). The antioxidant capacity was measured using 2,2-diphenyl-1-picrylhydrazyl (DPPH) assay. Sensory evaluation was evaluated by Quantitative Descriptive Analysis (QDA). Limonin, a bitter compound, and hesperidin, a flavonoid compound, were found in fresh lime juice. Blanching lime fruit could increase limonin and hesperidin contents as well as antioxidant capacity. Blanching had no effect on color and vitamin C contents of lime juice. Using of synthetic resin Amberlite XAD-16 in lime juice was performed. Lime juice treated with Amberlite XAD-16 had lower in limonin, hesperidin contents and antioxidant capacity. However it had no effect on vitamin C contents, but the color of lime juice was paler than that of the fresh one. From sensory evaluation, lime juice treated with resin had lower intensities in yellowness, fresh lime-like aroma and bitterness than fresh lime juice. Lime juice treated with resin was pasteurized at 70 °C for 60 s and 85°C for 30 s. Limonin content and antioxidant capacity of heat treated lime juice was increased. On the other hand, vitamin C contents had decreased. The result of sensory evaluation of pasteurized lime juice treated with synthetic resin had lower intensity in fresh lime-like aroma.

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